

Appl. No. : 09/770,540  
Filed : January 26, 2001

Claim 1. Furthermore, metal silicides are alloys of silicon and some sort of metal. Therefore, metal silicides are not metals, but instead metal-silicon alloys. The Applicant replaces deposited silicon with metal to thereby form a metal electrode. The Chu et al. reference fails to teach this.

In the Office Action, the Examiner rejected Claims 20-24 under 35 U.S.C. 102(b) as being anticipated by the Chu et al. reference (U.S. Patent No. 5,770,550). However, the Chu et al. reference fails to teach "forming a metal electrode having a rugged surface on the substrate" as the Applicant now claims in amended Claim 20. Instead, the Chu et al. reference teaches (column 3, lines 65-68; column 4, lines 1-30) forming a roughened germanium layer on the substrate and then overlying a thin conductive layer on the roughened germanium layer so that the thin conductive layer replicates the roughened surface of the underlying germanium layer. Clearly, the Chu et al. reference adds an additional process step to include an additional layer between the substrate and the conductive layer to thereby form the roughened conductive electrode. The Chu et al. reference is evidently different as illustrated in Figures 1-3 in both structure and process.

Summarizing the foregoing, it is respectfully requested in light of the above-discussion that Claims 6-12 and 20-24 are allowable over the art of record. Nevertheless, if any undeveloped issues remain or if any issues require clarification, the Examiner is respectfully requested to call the undersigned at the number shown below.

Attached hereto is a marked-up version of the changes made to the application by the current amendment. The attached page is captioned "**Version with Markings to Show Changes Made**"; additions are shown as underlined and deletions are shown [bracketed].

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,  
KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: 12/18/01

By:

Michael H. Trenholm  
Registration No. 37,743  
Attorney of Record  
Customer No. 20,995  
(909) 781-9231

**Version with Markings to Show Changes Made**

**IN THE CLAIMS:**

The claims have been amended as follows:

9. (Twice Amended) The process of Claim 6, wherein the step of replacing the silicon in the silicon electrode structure comprises forming a boundary layer on the silicon electrode structure, exposing the silicon electrode structure to a refractory metal-halide complex, and removing the boundary layer.

10. (Twice Amended) The process of Claim 9, wherein the boundary layer comprises a dielectric and the refractory metal-halide complex comprises WF<sub>6</sub>.

20. (Twice Amended) A method of forming an integrated circuit capacitor on a substrate, the method comprising:

forming a metal electrode having a rugged surface on the substrate;  
covering said rugged surface with a dielectric; and  
covering said dielectric with a second electrode.